



SECOND PRELIMINARY AMENDMENT
U.S. Application No. 10/588,659

Attorney Docket No.: Q96380

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): A p-type semiconductor material expressed in a composition formula of $Zn_{(1-\alpha-\beta-\gamma)}Cu_\alpha A_\beta B_\gamma S_{(1-x-y)}Se_x Te_y$ ($0.004 \leq \alpha \leq 0.4$, $\beta \leq 0.2$, $\gamma \leq 0.2$, $0 \leq x \leq 1$, $0 \leq y \leq 0.2$, and $x + y \leq 1$, A and B are elements selected from Cd, Hg and alkaline earth metals).

2. (original): The p-type semiconductor material according to claim 1, wherein the A is Mg.

3. (original): The p-type semiconductor material according to claim 1, wherein the B is Cd.

4. (original): The p-type semiconductor material according to claim 2, wherein the B is Cd.

5. (previously presented): The p-type semiconductor material according to claim 1, wherein the semiconductor material contains at least one dopant selected from Cl, Br, I, Al, Ga and In as a compensation dopant and a concentration of the compensation dopant is 10^{17} to 10^{20} cm^{-3} .

6. (previously presented): The p-type semiconductor material according to claim 1, wherein the semiconductor material has a light absorption coefficient of $5 \times 10^5 cm^{-1}$ or less at 470 nm to 750 nm.

7. (currently amended): The p-type semiconductor material according to claim 1, wherein a volume resistivity of the semiconductor material is equal to or higher than $10^4 \Omega\text{cm}$ and is lower than $10^3 \Omega\text{cm}$ $10^3 \Omega\text{cm}$.
8. (previously presented): The p-type semiconductor material according to claim 1, wherein a carrier concentration of the semiconductor material is equal to or higher than 10^{16} cm^{-3} and is lower than 10^{22} cm^{-3} .
9. (previously presented): A semiconductor device in which the p-type semiconductor material according to claim 1, constitutes a hole injecting electrode layer in an amorphous phase or a polycrystalline phase.
10. (original): The semiconductor device according to claim 9, wherein the semiconductor device is a light emitting device.
11. (previously presented): The p-type semiconductor material according to claim 2, wherein the semiconductor material contains at least one dopant selected from Cl, Br, I, Al, Ga and In as a compensation dopant and a concentration of the compensation dopant is 10^{17} to 10^{20} cm^{-3} .
12. (previously presented): The p-type semiconductor material according to claim 3, wherein the semiconductor material contains at least one dopant selected from Cl, Br, I, Al, Ga and In as a compensation dopant and a concentration of the compensation dopant is 10^{17} to 10^{20} cm^{-3} .
13. (previously presented): The p-type semiconductor material according to claim 4, wherein the semiconductor material contains at least one dopant selected from Cl, Br, I, Al, Ga

and In as a compensation dopant and a concentration of the compensation dopant is 10^{17} to 10^{20} cm⁻³.

14. (previously presented): The p-type semiconductor material according to claim 2, wherein the semiconductor material has a light absorption coefficient of 5×10^5 cm⁻¹ or less at 470 nm to 750 nm.

15. (previously presented): The p-type semiconductor material according to claim 3, wherein the semiconductor material has a light absorption coefficient of 5×10^5 cm⁻¹ or less at 470 nm to 750 nm.

16. (previously presented): The p-type semiconductor material according to claim 4, wherein the semiconductor material has a light absorption coefficient of 5×10^5 cm⁻¹ or less at 470 nm to 750 nm.

17. (currently amended): The p-type semiconductor material according to claim 2, wherein a volume resistivity of the semiconductor material is equal to or higher than 10^4 Ωcm and is lower than ~~10^3 Ωcm~~ 10^3 Ωcm.

18. (currently amended): The p-type semiconductor material according to claim 3, wherein a volume resistivity of the semiconductor material is equal to or higher than 10^4 Ωcm and is lower than ~~10^3 Ωcm~~ 10^3 Ωcm.

19. (currently amended): The p-type semiconductor material according to claim 4, wherein a volume resistivity of the semiconductor material is equal to or higher than 10^4 Ωcm and is lower than ~~10^3 Ωcm~~ 10^3 Ωcm.

20. (previously presented): The p-type semiconductor material according to claim 2, wherein a carrier concentration of the semiconductor material is equal to or higher than 10^{16} cm^{-3} and is lower than 10^{22} cm^{-3} .

21. (previously presented): The p-type semiconductor material according to claim 3, wherein a carrier concentration of the semiconductor material is equal to or higher than 10^{16} cm^{-3} and is lower than 10^{22} cm^{-3} .

22. (previously presented): The p-type semiconductor material according to claim 4, wherein a carrier concentration of the semiconductor material is equal to or higher than 10^{16} cm^{-3} and is lower than 10^{22} cm^{-3} .

23. (previously presented): A semiconductor device in which the p-type semiconductor material according to claim 2, constitutes a hole injecting electrode layer in an amorphous phase or a polycrystalline phase.

24. (previously presented): A semiconductor device in which the p-type semiconductor material according to claim 3, constitutes a hole injecting electrode layer in an amorphous phase or a polycrystalline phase.

25. (previously presented): A semiconductor device in which the p-type semiconductor material according to claim 4, constitutes a hole injecting electrode layer in an amorphous phase or a polycrystalline phase.

26. (previously presented): The semiconductor device according to claim 23, wherein the semiconductor device is a light emitting device.

27. (previously presented): The semiconductor device according to claim 24, wherein the semiconductor device is a light emitting device.

28. (previously presented): The semiconductor device according to claim 25, wherein the semiconductor device is a light emitting device.